

WHAT IS CLAIMED IS:

1. An optical material satisfying a condition
that $n_d > -6.667 \times 10^{-3} v_d + 1.70$ and $\theta_{g,F} \leq -2 \times 10^{-3} v_d + 0.59$ where n_d is a refractive index at d-line, v_d is
5 an Abbe number at the d-line and $\theta_{g,F}$ is a second
order dispersion at d-line.
- 10 2. The optical material according to claim 1
in which said Abbe number (v_d) is 30 or less.
- 15 3. The optical material according to claim 1,
wherein the optical material comprises a polymer and
an inorganic nanoparticle material having a second
order dispersion ($\theta_{g,F}$) value of 0.45 or less.
- 20 4. The optical material according to claim 1
wherein said inorganic nanoparticle material is an
ITO nanoparticle material.
- 25 5. The optical material according to claim 4
wherein said ITO nanoparticle material is in a size
from 2 to 50 nm.
6. The optical material according to claim 1,
25 wherein the optical material is ITO.
7. The optical material according to claim 3

wherein said polymer is polystyrene.

8. An optical element comprising an optical material according to claim 1,

5 wherein said optical element is formed in a desired shape by curing reaction.

9. The optical element according to claim 8 in which one surface thereof is a diffracting surface
10 having a diffractive shape.

10. The optical element according to claim 8 in which one surface thereof is a refracting surface having a refractive shape.

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11. An optical system comprising an optical element according to claim 8 and another optical element arranged in one and the same optical path.

20 12. The optical system according to claim 11, wherein the system images an object.

13. The optical system according to claim 11, wherein the system projects light onto an object.

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14. A laminated diffractive optical element comprising:

a first diffractive optical element having a surface formed into a diffractive shape; and

a second diffractive optical element having a surface formed into a diffractive shape,

5 wherein the first optical element is made of an optical material that satisfies a condition that $n_d > -6.667 \times 10^{-3} v_d + 1.70$ and $\theta_{g,F} \leq -2 \times 10^{-3} v_d + 0.59$ where n_d is a refractive index at d-line, v_d is an Abbe number at the d-line, and $\theta_{g,F}$ is a second order dispersion 10 at d-line;

the second optical element have an Abbe number larger than that of the first diffractive optical element; and

the diffracting surface of the first optical 15 element and the diffracting surface of the second optical element are arranged in an opposite position.